The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board

Paper No. 54

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte MANFRED ASSMUS and HANS-ULRICH PETEREIT

Appeal No. 2000-1405
Application 08/813,950

HEARD: October 9, 2002

Before KIMLIN, OWENS, and TIMM, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from the final rejection of claims 17-24. Claims 1, 3, 5, 7, 9, 11, 13 and 15, which are all of the other claims remaining in the application, stand withdrawn from consideration by the examiner as being directed toward a nonelected invention.

THE INVENTION

The appellants' claimed invention is directed toward an oral or dermal medicinal composition containing a specified thermoplastic coating and binding agent applied in a hot-melt liquid state. Claim 17 is illustrative:

17. An oral or dermal medicinal composition containing a pharmaceutical active substance and a thermoplastic coating and binding agent prepared by a method of applying a thermoplastic coating and binding agent in a hot-melt liquid state at a temperature of 100-150°C to said oral or dermal medicinal composition, followed by cooling to solidify the thermoplastic coating and binding agent, wherein said thermoplastic coating and binding agent consists essentially of a non-homogeneous mixture of, based on 100% by weight of A and B:

A) 5-95% of a thermoplastic acrylic plastic with a melting temperature above room temperature and below 200°C, a glass transition temperature below 120°C, and a melt viscosity of 1,000 to 1,000,000 Pa-sec at the melting temperature; and

B) 95-5 wt.% of a flow improver, which, at room temperature, is not compatible with the thermoplastic acrylic plastic, has a melting temperature above room temperature but below 200°C, a weight average molecular weight under 20,000 d, and a melt viscosity below 100 Pa·sec at the melting temperature of the acrylic plastic.

THE REFERENCES

De Haan et al. (De Haan)	4,708,874	Nov. 24, 1987
Mueller et al. (Mueller)	5,552,159	Sep. 3, 1996
Drouin et al. (EP '596)[1] (European patent application)	204,596	Dec. 10, 1986

[1] Our consideration of this reference is based upon the English translation thereof which is of record.

THE REJECTION

Claims 17-24 stand rejected under 35 U.S.C. § 103 as being unpatentable over the combination of De Haan, Mueller and EP '596.

OPINION

We affirm the aforementioned rejection.

The appellants state that the claims stand or fall together (brief, page 3). We therefore limit our discussion to one claim, i.e., claim 17, which is the sole independent claim. *See In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c)(7)(1997).

Mueller discloses a solid depot drug form which can be tablets, coated tablet cores, pellets, granules or suppositories, and is made by melt extrusion at 50 to 200°C (col. 1, line 62 - col. 2, line 16). The drug form includes at least 6% of at least one water-insoluble poly(meth)acrylate having a glass transition temperature of -60 to 180°C, the disclosed poly(meth)acrylates including Eudragit® RS and Eudragit® RL (col. 4, lines 15 and 45-46), which are among the appellant's thermoplastic acrylic plastics (claim 1, component A) (specification, page 11, line 8). The drug form can include up to 30 wt% of one or more conventional pharmaceutical auxiliaries, the disclosed

auxiliaries including stearic acid and polyethylene glycols (col. 2, line 66 - col. 3, line 3), which are among the appellants' flow improvers (claim 1, component B) (specification, page 13, line 21; page 14, line 8). Mueller's drug form also includes a water-soluble hydroxyalkylcellulose or hydroxyalkylmethylcellulose in a 5:95 to 95:5 weight ratio relative to the poly(meth)acrylate (col. 2, lines 5-9 and 60-62).

The appellants argue that Mueller's hydroxyalkylcellulose or hydroxyalkylmethylcellulose cannot be their flow improver because the molecular weight is too high (brief, page 7; reply brief, page 3). This argument is not persuasive because, as discussed above, Mueller's stearic acid and polyethylene glycol correspond to the appellants' flow improver.

The appellants argue that their "consisting essentially of" language excludes Mueller's hydroxyalkylcellulose or hydroxyalkylmethylcellulose (brief, page 7; reply brief, page 3). The term "consisting essentially of" includes not only what is specifically recited in the appellants' claim, but also any other materials which do not materially affect the basic and novel characteristics of the claimed invention. *See In re Herz*, 537 F.2d 549, 551-2, 190 USPQ 461, 463 (CCPA 1976); *In re*

De Lajarte, 337 F.2d 870, 873-4, 143 USPQ 256, 258 (CCPA 1964); *In re Janakirama-Rao*, 317 F.2d 951, 954, 137 USPQ 893, 896 (CCPA 1963). The appellants state that their composition can include other additives common in medicine coatings, particularly anionic polymers used for modifying the release behavior (specification, page 15, line 24 - page 16, line 5). De Haan teaches that carboxymethylcellulose, which is an anionic polymer,[2] and hydroxypropylcellulose and hydroxypropylmethylcellulose, which are nonionic polymers,[3] enhance viscosity and thereby are effective as penetration rate limiting materials in one of the disclosed granulate phases for providing controlled release of a drug (col. 3, lines 22-48; col. 4, lines 28-36). Hence, it reasonably appears that hydroxypropylcellulose and hydroxy-propylmethylcellulose, like carboxymethylcellulose, would not materially affect the basic and novel characteristics of the appellants' claimed composition but, rather, would provide the desired modification of release behavior.

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[2] *See* 5 *Kirk-Othmer Encyclopedia of Chemical Technology* 545 (John Wiley & Sons, 4th ed. 1993).

[3] *Id.* at 545, 553.

The appellants argue that Mueller does not disclose that the mixture is nonhomogeneous after the polymer melt cools (brief, page 7). Because, as discussed above, Mueller's composition can contain the appellants' thermoplastic acrylic plastic and flow improver, and it does not reasonably appear that Mueller's hydroxypropylcellulose and hydroxypropylmethylcellulose would materially affect the basic and novel characteristics of the appellants' composition, the nonhomogeniety recited in the appellants' claim 17 reasonably appears to be a characteristic of the overlapping portion of the compositions of the appellants and Mueller and, therefore, not effective for patentably distinguishing the appellants' composition over that of Mueller. *See In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

De Haan discloses a process for making a controlled release pharmaceutical tablet in granulate form having two distinct phases (abstract). One of the phases, the restraining phase, includes one or more liquid-insoluble materials, and the other phase, the housing phase, includes a liquid-soluble material and a penetration rate limiting material (col. 3, lines 22-29). An active ingredient is contained in the restraining phase and optionally in the housing phase (col. 4, lines 64-68). The

tablet is made by compressing a mixture of the two granulate phases (col. 3, lines 36-48; col. 6, lines 25-40). The insoluble material in the restraining phase can be Eudragit® RS or Eudragit® RL (col. 3, lines 64-66), which are among the appellants' thermoplastic acrylic plastics (claim 1, component A) (specification, page 11, line 8), and can be stearyl alcohol, stearic acid, palmitic acid or beeswax (col. 3, lines 55-63), which are among the appellants' flow improvers (claim 1, component B) (specification, page 13, lines 21 and 23; page 14, lines 2 and 7).

Mueller discloses the following advantages of melt extrusion over granulation and tableting (col. 1, lines 36-46):

> The advantage of extrusion over other techniques such as granulation and tabletting [sic] is that the technology is simple, solvents are avoided, the number and amount of auxiliaries is minimized, it is possible to prepare fixed solutions, elaborate mixing processes are avoided and, in particular, the possibility of demixing of the components is avoided, in other words the composition of the individual depot forms throughout production is reliably absolutely constant. In addition there are the advantages of a continuous process with high throughput and small losses.

It would have been *prima facie* obvious to one of ordinary skill in the art to use melt extrusion to make De Haan's granules to obtain the benefits disclosed by Mueller of melt extrusion over the granulation and tableting used by De Haan.

EP '596 discloses sustained release microparticles made by extruding a composition containing an active substance, one or more polymers and one or more liquid excipients (pages 2-3). The polymers include Eudragit® RSPM, RLPM, L and 5 (page 3). The liquid excipients include cetyl alcohol, stearic acid, and glycerol palmito-stearate (page 4), which are among the appellants' flow improvers (specification, page 13, line 21; page 14, lines 6 and 14). The appellants acknowledge that, but for the 65°C extrusion temperature in the EP '596 example 17, the composition falls within the scope of the appellants' claim 17 (brief, page 9).

The teaching by Mueller that extrusion temperatures of 50 to 200° are effective for extruding mixtures of Eudragit® polymers and auxiliary components which can be stearic acid (col. 3, lines 2 and 9-15; col. 4, lines 15 and 45-46) would have rendered *prima facie* obvious, to one of ordinary skill in the art, an EP '596 composition made using extrusion temperatures of not only 65°C, but also temperatures within Mueller's range such as 100 to 150°C.

The appellants argue that the supplemental declaration under 37 CFR § 1.132 of Assmus (filed October 5, 1999, paper no. 36) provides a comparison of the claimed invention with the closest

prior art which, the appellants argue, is EP' 596, wherein the mixing temperature is 65°C (brief, page 10).[4] De Haan, however, discloses a preparation (outside his invention) wherein a mixture of 12.5 g of Eudragit® RSPM, 32.8 g of theophylline monohydrate (an active ingredient), 2.5 g of cetyl alcohol, 12.5 g of talc, 3.8 g of Carbopol® (a carboxyvinyl polymer, col. 4, lines 31-32) 17.6 g of polyethylene glycol 6000, 18.4 g of lactose and 0.9 g of magnesium stearate, is divided into two portions, one of which is directly compressed into tablets and the other of which is granulated by melting at 90°C, pressing the pasty mass through a 2 mm screen, and solidifying the product (col. 11, lines 16-25). The composition in this example is within the scope of the appellants' claim 17, and the 90°C extrusion temperature is closer than the EP '596 extrusion temperature of 65°C to the 100-150°C range recited in the appellants' claim 17. Thus, it appears that the extruded composition in De Haan's example XI is the closest prior art. Because the comparison in the supplemental declaration does not appear to be against the

[4] The first declaration under 37 CFR § 1.132 of Assmus (filed June 21, 1999, paper no. 31) is not effective for showing unexpected results because it does not provide a comparison with the claimed invention, i.e., in none of the tests was the melt temperature within the appellants' 100-150°C range.

closest prior art, the appellants' argument that the supplemental declaration shows unexpected results is not persuasive. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991); *In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984).

Regardless, for the following reasons the appellants' argument is not persuasive even if example 17 of EP '596 is the closest prior art.

First, the appellants have not presented evidence which is effective for showing unexpected results. *See In re Freeman*, 474 F.2d 1318, 1324, 177 USPQ 139, 143 (CCPA 1973); *In re Klosak*, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972). The conclusion in the supplemental declaration is that none of the melts at 65°C was homogeneous (page 2). The photographs and the results in the table, however, merely show that the polymer particles are smoother when the melt temperature is 150°C. The appellants have not established that polymer particle smoothness correlates with melt homogeniety. The appellants argue that separate phases indicate melt homogeniety (reply brief, page 2), but the photographs show that the polymer particles obtained using all of the melt temperatures are in a separate phase. Moreover, the polymer particles obtained using a melt temperature of 100°C are

as similar to the particles obtained using a melt temperature of 65°C as they are to the particles obtained using a melt temperature of 150°C, especially when the flow improver is PEG 6000, GMS or stearic acid.

Second, the evidence presented in the supplemental declaration is not commensurate in scope with the appellants' claim 17. *See In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983); *In re Clemens*, 622 F.2d 1029, 1035, 206 USPQ 289, 296 (CCPA 1980). The appellants' claim 17 encompasses a great variety of thermoplastic acrylic plastics, flow improvers, and their relative amounts, yet only one thermoplastic acrylic polymer, four flow improvers, and either 50 wt% or 80 wt% of flow improver were used. We find in the evidence of record no reasonable basis for concluding that the great number of materials encompassed by the appellants' claims would behave as a class in the same manner as the particular materials tested. *See In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972); *In re Susi*, 440 F.2d 442, 445-46, 169 USPQ 423, 426 (CCPA 1971). The appellants argue that the results in the declaration are representative of the claimed invention (brief, pages 11-12), but have provided no evidence or technical reasoning in support of this argument.

For the above reasons we conclude that the composition claimed in the appellants' claim 1 would have been obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. § 103.

DECISION

The rejection of claims 17-24 under 35 U.S.C. § 103 over the combination of De Haan, Mueller and EP '596 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

Edward C. Kimlin)
Administrative Patent Judge)
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Terry J. Owens) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES
)
Catherine Timm)
Administrative Patent Judge)

Oblon, Spivak, McClelland,
Maier & Neustadt
1755 Jefferson Davis Hwy.
Fourth Floor
Arlington, VA 22202

TJO/cam